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EXAMINER

MADDEN, GREGORY VINCENT

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,888

Applicant(s)

STEINBERG ET AL.

Examiner

Gregory V. Madden

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☒ Claim(s) 2,7 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 2, 7, and 31 are objected to because of the following informalities: In claim 2, the claim reads "...said auto focus on entire image. capture", whereas the claim should read --...said auto focus on entire image capture--, whereby the period is deleted between the words "image" and "capture". As for claims 7 and 31, the claims read "...said image faces than faces identified n the identifying step", whereas the claims should read --...said image faces than faces identified in the identifying step--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 11-27, and 35-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Ray et al. (U.S. Pat. 6,940,545).

First, considering **claim 1**, the Ray reference teaches a method within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, the method for perfecting the auto focus mechanism of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face

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(when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. Please refer to Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

In regard to **claim 2**, the limitations of claim 1 are set forth above, and the Ray reference further discloses that the method further comprises an initial step of performing auto focus on the entire image capture (in image capture during framing mode), as taught in Col. 6, Line 57 – Col. 7, Line 22.

As for **claim 3**, again the limitations of claim 1 are taught above, and Ray teaches that the method for auto focusing the lens and the automatic adjusting automatically adjusts one or more properties of the adjustable optical system (optical section 21), as taught in Col. 7, Lines 36-44.

Regarding **claim 11**, again the limitations of claim 1 are taught above by Ray, and the Ray reference also teaches that the auto focus performed on the plurality of groups is done by calculating a weighted average on individual objects of the groups (e.g. the image will be optimally focused on the preponderance of faces in the scene), as is taught in Col. 7, Lines 40-42.

Considering **claim 12**, while Ray teaches the limitations of claim 1 above, Col. 7, Lines 58-62, and Col. 11, Lines 8-67 of the Ray reference teaches that the face pixels identifying step is automatically performed by the CPU 30 based on relative value as to a detection assurance (referred to as the “Component W”).

As for **claim 13**, the limitations of claim 12 are taught above, and the Ray reference again teaches in Col. 7, Lines 58-62, and Col. 11, Lines 8-67 that the weighted average calculation is done based on the relative values as to the detection assurance.

In regard to **claim 14**, the limitations of claim 1 are taught above by Ray, and Ray also discloses that the face pixels identifying step (face detection) is automatically performed by an image processing

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apparatus (CPU 30) which receives a relative value as to an estimated importance of the detected regions (referred to as the Component S), which is set forth in Col. 14, Line 12 – Col. 15, Line 6.

Regarding **claim 15**, the limitations of claim 14 are taught above, and Ray teaches that the weighted average is calculated based on the relative values as to the estimated detection assurance, as taught in Col. 14, Line 12 – Col. 15, Line 6.

Considering **claim 16**, again the limitations of claim 14 are taught above, and Ray teaches that the estimated importance of the detected regions comprising at least one parameter includes the size of the faces (as taught in Col. 7, Lines 42-44) and the location of the faces within the captured image (as taught in Col. 7, Lines 40-42).

Next, in regard to **claim 17**, as is similarly shown above with respect to claim 1, the Ray reference teaches a digital camera (10) having a lens system (21), with a method of adjusting a digitally-detected image based on detection of faces within the image to achieve a desired image parameter, the method comprising the steps of identifying a group of pixels that correspond to a face within the digitally-detected image (via face detection from frame image), determining initial values of one or more parameters of pixels of the group of pixels, and automatically adjusting values of one or more parameters of the pixels of the group of pixels based upon a comparison of the initial parameter with the desired parameter, as is taught in Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

As for **claim 18**, the limitations of claim 17 are taught above, and Ray further discloses that the initial parameter and the desired parameter comprise an initial focus and a desired focus, respectively, which is taught in Col. 7, Lines 36-44.

Regarding **claim 19**, the limitations of claim 18 are set forth above, and the Ray reference teaches again in Col. 7, Lines 36-44 that in the method for auto focusing the lens, the automatic adjusting step automatically adjusts one or more properties of the lens system (21).

Considering **claim 20**, the limitations of claim 17 are taught above, and the method of Ray further discloses that one or more parameters of pixels of the group of pixels comprises locating a face (face detection) within the digitally-detected image (from frame image), as is taught in Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

Next, in regard to **claim 21**, as is similarly shown above with respect to claim 17, the Ray reference teaches a digital camera (10) having a lens system (21), with a method of adjusting a digitally-detected image based on detection of faces within the image to achieve a desired image parameter, the method comprising the steps of identifying a group of pixels that correspond to a face within the digitally-detected image (via face detection from frame image), determining initial values of one or more parameters of pixels of the group of pixels, and automatically providing an option for adjusting values of one or more parameters of the pixels of the group of pixels based upon a comparison of the initial parameter with the desired parameter, as is taught in Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

As for **claim 22**, the limitations of claim 21 are taught above, and Ray further discloses that the initial parameter and the desired parameter comprise an initial focus and a desired focus, respectively, which is taught in Col. 7, Lines 36-44.

Regarding **claim 23**, the limitations of claim 22 are set forth above, and the Ray reference teaches again in Col. 7, Lines 36-44 that in the method for auto focusing the lens, the automatic adjusting step automatically adjusts one or more properties of the lens system (21).

Considering **claim 24**, the limitations of claim 21 are taught above, and the method of Ray further discloses that one or more parameters of pixels of the group of pixels comprises locating a face (face detection) within the digitally-detected image (from frame image), as is taught in Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

Next, in regard to **claim 25**, as is similarly shown with respect to claim 1 above, Ray teaches a method within a digital acquisition device (camera 10) with an adjustable optical system (optical section 21) having an auto focusing mechanism, one or more processor readable storage devices (RAM 42 and ROM 44) having processor readable code embodied thereon, the processor readable code for programming one or more processors (CPU 30) to perform a method of perfecting the auto focus mechanism as part of the adjustable optical system as part of an image capture process using face detection in the image capture process to achieve desired image acquisition parameters comprising identifying a plurality of groups of pixels that correspond to an image of a face (when face detection is performed) within a digitally-captured image (framing image), and determining corresponding image attributes of the group of pixels, and perfecting the auto focus by performing auto focus on the plurality of groups of pixels that correspond to the image of the face. Please refer to Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

In regard to **claim 26**, the limitations of claim 25 are set forth above, and the Ray reference further discloses that the method further comprises an initial step of performing auto focus on the entire image capture (in image capture during framing mode), as taught in Col. 6, Line 57 – Col. 7, Line 22.

As for **claim 27**, again the limitations of claim 25 are taught above, and Ray teaches that the method for auto focusing the lens and the automatic adjusting automatically adjusts one or more properties of the adjustable optical system (optical section 21), as taught in Col. 7, Lines 36-44.

Regarding **claim 35**, again the limitations of claim 25 are taught above by Ray, and the Ray reference also teaches that the auto focus performed on the plurality of groups is done by calculating a weighted average on individual objects of the groups (e.g. the image will be optimally focused on the preponderance of faces in the scene), as is taught in Col. 7, Lines 40-42.

Considering **claim 36**, while Ray teaches the limitations of claim 25 above, Col. 7, Lines 58-62, and Col. 11, Lines 8-67 of the Ray reference teaches that the face pixels identifying step is automatically

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performed by the CPU 30 based on relative value as to a detection assurance (referred to as the “Component W”).

As for **claim 37**, the limitations of claim 36 are taught above, and the Ray reference again teaches in Col. 7, Lines 58-62, and Col. 11, Lines 8-67 that the weighted average calculation is done based on the relative values as to the detection assurance.

In regard to **claim 38**, the limitations of claim 25 are taught above by Ray, and Ray also discloses that the face pixels identifying step (face detection) is automatically performed by an image processing apparatus (CPU 30) which receives a relative value as to an estimated importance of the detected regions (referred to as the Component S), which is set forth in Col. 14, Line 12 – Col. 15, Line 6.

Regarding **claim 39**, the limitations of claim 38 are taught above, and Ray teaches that the weighted average is calculated based on the relative values as to the estimated detection assurance, as taught in Col. 14, Line 12 – Col. 15, Line 6.

Considering **claim 40**, again the limitations of claim 38 are taught above, and Ray teaches that the estimated importance of the detected regions comprising at least one parameter includes the size of the faces (as taught in Col. 7, Lines 42-44) and the location of the faces within the captured image (as taught in Col. 7, Lines 40-42).

Next, in regard to **claim 41**, as is similarly shown above with respect to claim 17, the Ray reference teaches a digital camera (10) having a lens system (21), one or more processor readable storage devices (42 and 44) having processor readable code readable thereon, the processor readable code for programming a processor (CPU 30) to perform a method of adjusting a digitally-detected image based on detection of faces within the image to achieve a desired image parameter, the method comprising the steps of identifying a group of pixels that correspond to a face within the digitally-detected image (via face detection from frame image), determining initial values of one or more parameters of pixels of the group of pixels, and automatically adjusting values of one or more parameters of the pixels of the group

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of pixels based upon a comparison of the initial parameter with the desired parameter, as is taught in Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

As for **claim 42**, the limitations of claim 41 are taught above, and Ray further discloses that the initial parameter and the desired parameter comprise an initial focus and a desired focus, respectively, which is taught in Col. 7, Lines 36-44.

Regarding **claim 43**, the limitations of claim 42 are set forth above, and the Ray reference teaches again in Col. 7, Lines 36-44 that in the method for auto focusing the lens, the automatic adjusting step automatically adjusts one or more properties of the lens system (21).

Considering **claim 44**, the limitations of claim 41 are taught above, and the method of Ray further discloses that one or more parameters of pixels of the group of pixels comprises locating a face (face detection) within the digitally-detected image (from frame image), as is taught in Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

Next, in regard to **claim 45**, as is similarly shown above with respect to claims 21 and 41, the Ray reference teaches a digital camera (10) having a lens system (21), one or more processor readable storage devices (42 and 44) having processor readable code readable thereon, the processor readable code for programming a processor (CPU 30) to perform a method of adjusting a digitally-detected image based on detection of faces within the image to achieve a desired image parameter, the method comprising the steps of identifying a group of pixels that correspond to a face within the digitally-detected image (via face detection from frame image), determining initial values of one or more parameters of pixels of the group of pixels, and automatically providing an option for adjusting values of one or more parameters of the pixels of the group of pixels based upon a comparison of the initial parameter with the desired parameter, as is taught in Figs.1-3, Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

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As for **claim 46**, the limitations of claim 45 are taught above, and Ray further discloses that the initial parameter and the desired parameter comprise an initial focus and a desired focus, respectively, which is taught in Col. 7, Lines 36-44.

Regarding **claim 47**, the limitations of claim 46 are set forth above, and the Ray reference teaches again in Col. 7, Lines 36-44 that in the method for auto focusing the lens, the automatic adjusting step automatically adjusts one or more properties of the lens system (21).

Considering **claim 48**, the limitations of claim 45 are taught above, and the method of Ray further discloses that one or more parameters of pixels of the group of pixels comprises locating a face (face detection) within the digitally-detected image (from frame image), as is taught in Col. 4, Lines 15-66, and Col. 6, Line 57 – Col. 7, Line 44.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-10 and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ray et al. (U.S. Pat. 6,940,545) in view of Sannoh et al. (U.S. Pub. 203/0071908).

Next, regarding **claim 4**, the limitations of claim 1 are taught above, and while the Ray reference does teach that the camera performs perfecting of the auto focus via face detection in the captured image, Ray fails to specifically teach that the user manually activates the camera to perform such perfecting of auto focusing. However, the Sannoh reference discloses in Fig. 3 and Para. [0086] that the user manually

selects the auto focusing mode and face detection operation mode for perfecting the auto focusing of the image. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual selection of the auto focus perfecting mode, as taught by Sannoh, with the auto focus perfecting mode of Ray. One would have been motivated to do so because by allowing the user to manually select whether or not they want to perform the auto focus perfecting based on face detection, the user can manually turn off auto focus perfecting in instances where auto focus perfecting is not desired, such as quick-capture scenes, when pre-processing time must be kept to a minimum.

As for **claim 5**, again the limitations of claim 1 are taught above, and while the Ray reference does teach that the method comprises manually adding an indication of another face within the image, as taught in Col. 5, Lines 6-62, and Col. 7, Lines 2-21, the Ray reference is silent in regard to manually removing one or more of the plurality of groups of pixels that correspond to the image of a face. However, the Sannoh reference teaches that the user can manually remove one or more of the plurality of groups of pixels detected as faces in Figs. 6c-d and Para. [0105-0108].

In regard to **claim 6**, the limitations of claim 5 are taught above, and Sannoh further teaches that the manual removal of one or more of the detected faces is performed in response to false detection of the regions as one or more faces in Paras. [0105-0108].

Considering **claim 7**, again the limitations of claim 5 are taught above, and again Sannoh teaches in Paras. [0105-0108] that the removal of one or more of the detected faces is performed in response to a determination (by the user) to concentrate on less of the image faces than faces identified in the identifying step.

Next, in regard to **claim 8**, the limitations of claim 5 are taught by Ray in view of Sannoh, and the Ray reference also teaches that the false detection of faces can be avoided by increasing a sensitivity level (i.e. using Component S detection, as set forth in Col. 14, Line 12 – Col. 15, Line 5) of the face identifying step, which is also taught in Col. 13, Lines 48-51.

Regarding **claim 9**, again the limitations of claim 5 are taught above, and the Ray reference teaches that the manual manipulation of the chosen faces is performed by an interactive visual method, as taught in Col. 7, Lines 12-21.

As for **claim 10**, the limitations of claim 5 are taught above, and the Ray reference also teaches that the manual manipulation of the chosen faces can be performed using an image acquisition built-in display (touch sensitive screen and stylus, etc.), also taught in Col. 7, Lines 12-21.

Next, regarding **claim 28**, the limitations of claim 25 are taught above, and while the Ray reference does teach that the camera performs perfecting of the auto focus via face detection in the captured image, Ray fails to specifically teach that the user manually activates the camera to perform such perfecting of auto focusing. However, the Sannoh reference discloses in Fig. 3 and Para. [0086] that the user manually selects the auto focusing mode and face detection operation mode for perfecting the auto focusing of the image. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the manual selection of the auto focus perfecting mode, as taught by Sannoh, with the auto focus perfecting mode of Ray. One would have been motivated to do so because by allowing the user to manually select whether or not they want to perform the auto focus perfecting based on face detection, the user can manually turn off auto focus perfecting in instances where auto focus perfecting is not desired, such as quick-capture scenes, when pre-processing time must be kept to a minimum.

As for **claim 29**, again the limitations of claim 25 are taught above, and while the Ray reference does teach that the method comprises manually adding an indication of another face within the image, as taught in Col. 5, Lines 6-62, and Col. 7, Lines 2-21, the Ray reference is silent in regard to manually removing one or more of the plurality of groups of pixels that correspond to the image of a face. However, the Sannoh reference teaches that the user can manually remove one or more of the plurality of groups of pixels detected as faces in Figs. 6c-d and Para. [0105-0108].

In regard to **claim 30**, the limitations of claim 29 are taught above, and Sannoh further teaches that the manual removal of one or more of the detected faces is performed in response to false detection of the regions as one or more faces in Paras. [0105-0108].

Considering **claim 31**, again the limitations of claim 29 are taught above, and again Sannoh teaches in Paras. [0105-0108] that the removal of one or more of the detected faces is performed in response to a determination (by the user) to concentrate on less of the image faces than faces identified in the identifying step.

Next, in regard to **claim 32**, the limitations of claim 29 are taught by Ray in view of Sannoh, and the Ray reference also teaches that the false detection of faces can be avoided by increasing a sensitivity level (i.e. using Component S detection, as set forth in Col. 14, Line 12 – Col. 15, Line 5) of the face identifying step, which is also taught in Col. 13, Lines 48-51.

Regarding **claim 33**, again the limitations of claim 29 are taught above, and the Ray reference teaches that the manual manipulation of the chosen faces is performed by an interactive visual method, as taught in Col. 7, Lines 12-21.

As for **claim 34**, the limitations of claim 29 are taught above, and the Ray reference also teaches that the manual manipulation of the chosen faces can be performed using an image acquisition built-in display (touch sensitive screen and stylus, etc.), also taught in Col. 7, Lines 12-21.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bolle et al. (U.S. Pat. 6,301,440)

Suh (U.S. Pat. 6,977,687)

Sobol (U.S. Pat. 7,034,848)

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
November 3, 2006

A handwritten signature in black ink, appearing to read 'Ngoc-Yen Vu', with a long horizontal flourish extending to the right.

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER